WHAT IS CLAIMED IS:

1. A method of time varying filtering, comprising:

   a. filtering a segment of a signal using a filter; and

   b. disengaging the filter in a sequence of graduated steps at the end of the segment; and

   c. repeating steps a and b until all segments have been filtered.

2. The method of claim 1, where a given filter is disengaged by changing the coefficients from their regular values for the filter to values reflecting a gain of unity and no phase delay.

3. The method of claim 2, where each filter is disengaged in a series of intermediate steps.

4. The method of claim 3, where in each said step the filter has a different set of coefficients.

5. The method of claim 4, where one sample from the input signal is processed during each step.

6. The method of claim 4, where two or more samples from the input signal are processed during each step.

7. A method of time varying filtering, comprising:

a. engaging a filter in a sequence of graduated steps at the beginning of a signal segment;

b. filtering the segment of using the filter; and

c. repeating steps a and b until all segments have been filtered.

8. The method of claim 7, where a given filter is engaged by changing the coefficients from values reflecting a gain of unity and no phase delay to their regular values.

9. The method of claim 8, where each filter is engaged in a series of intermediate steps.

10. The method of claim 9, where in each said step the filter has a different set of coefficients.

11. The method of claim 10, where one sample from the input signal is processed

during each step.

12. The method of claim 10, where two or more samples from the input signal are processed during each step.

13. A method of time varying filtering, comprising:

a. engaging a filter in a sequence of graduated steps at the beginning of a signal segment;

b. filtering the segment of using the filter;

c. disengaging the filter in a sequence of graduated steps at the end of a signal segment; and

d. repeating steps a-c until all segments have been filtered.

14. The method of claim 13, where a given filter is engaged by changing the coefficients from values reflecting a gain of unity and no phase delay to their regular values.

15. The method of claim 14, where each filter is engaged in a series of intermediate steps.

16. The method of claim 15, where in each said step the filter has a different set of coefficients.

17. The method of claim 16, where one sample from the input signal is processed during each step.

18. The method of claim 16, where two or more samples from the input signal are processed during each step.

19. An article comprising a computer readable medium having instructions stored thereon which when executed causes:

a. filtering a segment of a signal using a filter;

b. disengaging the filter in a sequence of graduated steps at the end of the segment; and

c. repeating steps a and b until all input signal segments have been filtered.

20. An article comprising a computer readable medium having instructions stored thereon which when executed causes:

a. engaging a filter in a sequence of graduated steps at the beginning of a signal segment;

b. filtering the segment using the filter; and

c. repeating steps a and b until all input signal segments have been filtered.

21. An article comprising a computer readable medium having instructions stored thereon which when executed causes:

a. filtering a segment of a signal using a filter;

b. disengaging the filter in a sequence of graduated steps at the end of the segment;

c. engaging a filter in a sequence of graduated steps at the beginning of the next segment of the signal; and

d. repeating steps a-c until all input signal segments have been filtered.

22. A method, comprising:

inaudibly switching one or more filters on and/or off during processing of an input signal by:

migrating their coefficients from an original set of values to a final set of values through a series of intermediate steps.

23. The method of claim 22, where said filters are:

engaged by changing the co-efficients to their regular values for the filter from values reflecting a gain of unity and no phase delay, and

disengaged by changing the co-efficients from their regular values for the filter to values reflecting a gain of unity and no phase delay.

24. The method of claim 23, where each filter is disengaged or disengaged, as the case may be, in a number of intermediate steps.

25. The method of claim 24, where in each said step the filter has a different set of coefficients.

26. The method of claim 25, where one sample from the input signal is processed during each step.

27. The method of claim 25, where two or more samples from the input signal are processed during each step.

28. Apparatus for time varying filtering, comprising:

a filtering processor, arranged to process a given input signal by implementing an arbitrary filter; and

a coefficient calculator, arranged to calculate:

the co-efficients for the arbitrary filter;

a set of new coefficients for the arbitrary filter, at which the filter is neutralized; and

a series of intermediate co-efficient values between the original filter co-efficients and the new co-efficients.

29. The apparatus of claim 28, further comprising a memory to store a plurality of filtering co-efficients.

30. The method of any of claims 1-6, or of claims 13-18, where a filter is disengaged by migrating its poles to its zeros, or its zeros to its poles.

31. The method of claim 30, where after the migration has been completed, the filter is removed.

32. The method of claim 30, where after the migration has been completed, the colocational poles and zeros are then migrated to the origin via a series of

intermediate steps.

33. The method of claim 30, where after the migration has been completed:

the colocational poles and zeros are then migrated to the origin via a series of intermediate steps; and

the filter is then removed.